DOCUMENT RESUME

ED 102 102 95 SP 008 880

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TITLE Special Education and Consulting Teachers.
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SPONS AGENCY Bureau of Educational Personnel Development (DHEW/OE), Washington, D.C.; Bureau of Education for the Handicapped (DHEW/OE), Washington, D.C.
PUB DATE May 71
NOTE 41p.; Based on paper presented at the Banff International Conference on Behavior Modification (3rd, University of Calgary, Calgary 44, Alberta, Canada, April 1971)

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS Behavioral Science Research; *Consultants; Elementary Education; Enrichment Experience; *Graduate Study; *Handicapped Children; Individualized Instruction; *Regular Class Placement; Research; Resource Teachers; *Special Education Teachers; Teacher Education
IDENTIFIERS *Vermont

ABSTRACT

One of several possible systems for delivering special education services, a consulting teacher approach seeks to manage and educate handicapped children in regular elementary classrooms. Vermont has adopted this approach for certain handicapped children because it is less costly and disruptive, avoids labeling and extensive testing, provides normal peer models, and trains regular teachers in special education. During a 2-year graduate program, students preparing to be consulting teachers receive training in the individualization of instruction, analysis of behavior, and research as well as supervised experience in consulting with and training teachers through services to 32 handicapped children. The training program is evaluated mainly by services students provide to handicapped children. (An 18-item bibliography is included.) (Author)

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Special Education and Consulting Teachers*

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May, 1971

* Based on paper presented at the Third Banff International Conference on Behavior Modification, University of Calgary, Calgary 44, Alberta, Canada, April, 1971.

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There are several strategies for delivering services to handicapped children which are now in practice in the United States. Handicapped learners may live in institutions which provide total care. The children receive special education as part of the institution's services.

A second approach is that of the special class. Children are removed from their "normal" peers. The special class may be contained in a regular school building or it may be separate from regular schools. The children typically live at home when placed in special classes.

A third approach may be called that of the resource teacher. A child who has learning difficulties is removed on a temporary, part-time basis from his classroom to receive diagnostic teaching from a resource teacher. The resource teacher diagnoses the child's difficulties and writes an educational prescription that the child's classroom teacher will then perform.

A fourth approach, and one that has been developing in Vermont over the last several years, is that of a consulting teacher. The consulting teacher assists regular classroom teachers to carry out diagnoses and to develop an intervention approach to facilitate a given child's educational development. The teacher implements both diagnosis and intervention procedures. Through this implementation with the assistance of the consulting teacher, the regular teacher receives in-service training in special education.

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Why a Consulting Teacher Approach was Developed in Vermont

Four years ago, the state of Vermont had in operation three of the four delivery systems briefly described above: handicapped children were served in residential institutions, in special classes and a few were served by resource teachers. Through these three approaches approximately 2,000 children were receiving special education. An estimated additional 8,000 children were judged to require special education. To provide special education to these 8,000 children who were of elementary school age, the consulting teacher approach was developed in Vermont. Considerations which led to this development are presented below.

Disruption, Bussing, and Costs. The elementary age children who required special education services were, in general, attending elementary schools in Vermont. These schools are generally composed of small numbers of pupils (typically 200 or less) and are widely separated from one another. Thus, to remove these children from their regular classes to place them in special classes would require that regional special classes be formed to serve several elementary schools. It was doubtful that each elementary school would have enough children to form its own categorical special classes; that is, a class for the retarded, one for the emotionally disturbed, and one for the learning disabled. Thus, elementary schools would have to join with other schools to form regional special classes. This would require that children be bussed from their homes. It was

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apparent that in many cases this bussing would be extensive: children would be spending several hours a day in riding the bus.

It was also apparent that the formation of such regional special classes would be disruptive to the ongoing educational programs. Children would have to be identified and removed from their classes and all of this explained to the children and their parents.

Cost estimates (McKenzie, 1969) indicated that the formation of regional special classes would involve costs for construction of special classes, training of teachers, bussing, and yearly operation much higher than those required by serving these children through a consulting teacher approach. By providing special education services to these children in their regular classrooms, skills of their current teachers, and existing buildings and materials would be available for their education.

Thus, to avoid disrupting an ongoing system and creating an aversive situation for children and parents of children requiring special services, to avoid children spending several hours a day riding a bus, and to gain the apparent substantial savings to Vermont taxpayers, the consulting teacher approach was selected. (These considerations generally hold for a resource teacher approach, as a resource teacher requires a separate classroom which children attend.)

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Increasing the skills and responsibilities of regular classroom teachers. The addition of special class teachers, resource teachers, speech therapists, and remedial reading teachers to schools has led to a valuable increase in both the quantity and quality of services available to school children. Although assuredly unintentional, one unfortunate by-product of adding these specialists has been a tendency to remove responsibility from regular classroom teachers. The hiring of such specialists can indicate that classroom teachers are no longer responsible for ameliorating speech and reading deficits and for managing the education of children with various learning difficulties. This has had a tendency to reduce the incentive for regular class teachers to increase their own skills in these special areas.

As the specialists mentioned above work directly with the children and not through classroom teachers, it is not possible for classroom teachers to gain skills as an integral part of special services to children. An additional disadvantage is that these specialists remove the child from his classroom to provide him services, resulting in a tendency for teachers to conclude that the removal of difficult children from their classes is the only way to provide these children with adequate instruction.

Additional arguments for a consulting teacher approach. These arguments are not presented to denigrate other delivery systems for providing special education to handicapped children.

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(Here it should be noted that the other three delivery systems are all currently being employed in Vermont and will be continued to be employed as long as they prove functional.) These arguments are presented because they tend to increase the appeal of managing and educating handicapped children in regular classrooms wherever this is possible. Increasing the appeal of such an approach to special education also increases the appeal of developing a consulting teacher approach.

Providing special education services in regular classes would obviate the necessity of labeling children. Extensive psychological, and educational evaluation which is conducted outside the classroom by professionals other than teachers could be decreased. It could be argued that such evaluation is necessary only to label the child - e.g., as <u>retarded</u> - for special class placement. Sometimes it is questionable whether or not such evaluation will discover anything more about the child with learning problems than that which has been observed by the child's teacher in the daily learning situation. In fact, if teachers (and/or parents) did not observe a degree of inappropriate and deficit behaviors in the child, it is improbable that the child would be referred for testing. This testing has the additional disadvantage of measuring behavior outside the learning situation and sampling a small crossection of behavior at a single and isolated point in time. Apparently, if labels were no longer needed, time and resources invested in individualized testing could be reduced, freeing skilled professionals to engage in more effective educational activity.

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Labels are nonfunctional in regard to developing an educational program for a child. If a child has been labeled emotionally disturbed, this tells neither teacher nor parent what needs to be done to help the child progress socially and academically. A label may stigmatize a child and serve to isolate and alienate him from his peers. Further isolation of the handicapped learner occurs in the special class placement itself. Often handicapped learners must be bussed to special classrooms which are far from their home neighborhood. Dunn (1968) has reviewed litigation and court action which has argued that labeling and special class placement involve discrimination and segregation. In one case the court disallowed labeling and special class placement of a group of children as a form of segregation.

Bateman (1967) has argued that when certain handicapped learners are placed in regular classrooms their peers show a greater appreciation of positive characteristics of handicapped learners and a greater understanding of their disabilities. Regular class placement of handicapped learners has the further advantage of offering normal and superior peer models. The present author has observed several instances where children who were disruptive in regular classrooms were grouped together in a special class and their disruptive behaviors increased rather than decreased. One factor leading to such an increase may well be that the peer models of the special classs present inappropriate behavior to be imitated.

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Research evidence reviewed by Darrah (1967) and Dunn (1968) indicates that at least some handicapped learners placed in regular classrooms progress as well as comparable children placed in special classrooms in spite of the fact that regular classroom teachers typically do not have training in the education of handicapped children.

Summary. A consulting teacher approach to providing special education to unserved children was favored over the extension of other kinds of existing delivery systems for the following reasons:

1. retention of children in regular classes and consequent avoidance of disruption to the schools;
2. avoiding extensive bussing of children to regional special classes (or resource teacher classes);
3. resultant savings of financial resources;
4. avoidance of the stigma of labels and elimination of extensive standardized testing;
5. avoidance of discrimination and segregation;
6. opportunities for normal children to appreciate and understand handicapped children as well as for the handicapped children to have normal peer models; and
7. resultant training of regular teachers in special education skills.

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A Behavioral Model of Education

As Hanley's (1970) review indicates, applied behavior analysts have been successful in modifying a wide range of behaviors of educational significance. Implicit in each of the applications reviewed is a similar model of education. The conceptualization, training, and evaluation of training of consulting teachers are all based on such a model.

The model. Goals which are to result from the educational process are delineated in terms of instructional objectives. Ultimately, such objectives are to be defined in terms of Mager's (1962) criteria: an objective must specify in terms which are observable by at least two people the conditions under which a given goal behavior will occur, an objective definition of the goal behavior, and the criteria which the behavior must meet.

With instructional objectives specified, the next task is to measure where each student is in relationship to the objectives. Such measurements determines the entry level of each student. If a student is found to already possess the behaviors of the instructional objective in his repertoire, teaching is not necessary.

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For the child who has not achieved all instructional objectives, teaching/learning procedures are instigated to move the student from his entry level to the instructional objectives. Under the behavioral model, these procedures involve primarily that of reinforcement (Skinner, 1968). Reinforcement procedures involve arranging consequences for behaviors which lead to an increase in the frequency of these behaviors. Other teaching/learning procedures under the behavioral model are scheduling, shaping, and errorless discrimination. Scheduling involves the relationship of consequences to behaviors. That is, in establishing a behavior that has occurred infrequently, it is most effective to arrange for the consequences to occur contingently upon the behavior every time the behavior occurs. Once a behavior has increased to the desired level, then the consequences can be arranged to occur only occasionally. In the shaping procedure, behavioral sub-goals are first achieved until the goal behavior is reached. This may involve, for example, requiring that the student complete only two long division problems correctly, and then requiring four, then six, and so on. It may also involve establishing what are called enabling objectives for some ultimate instructional objective. That is, a child may learn to add, subtract, and multiply, which are enabling objectives for the child's learning long division.

Errorless discrimination involves procedures used to establish particular stimuli as occasions upon which behavior, if it occurs, will be reinforced. The procedures involve prompting

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adding cues, and gradual elimination of added cues (Terrace, 1963).

The behavioral progress of the child from entry level to instructional objectives is regularly and reliably measured. Such measures are compared with the entry level measures of the student, and this comparison enables an evaluation of the effectiveness of the teaching/learning procedures. Procedures are judged effective if the child is making adequate progress toward the instructional objectives. If he is not, then teaching/learning procedures are modified.

The teacher's role in the model. The teacher is responsible for the student making satisfactory progress from his entry level toward the instructional objectives. The teacher makes frequent measures of student behaviors relevant to instructional objectives and applies the teaching/learning procedures of reinforcement, scheduling, shaping, and errorless discrimination. The teacher evaluates his use of procedures based on regular measures. He compares these measures with entry level measures of each student to insure that satisfactory progress is being made. If progress is not being made, the teacher changes the procedures being employed, or adds new procedures.

Teaching behavior is associated with applications of the teaching/learning procedures which brought about measured progress of students toward instructional objectives. Such progress should serve as consequential stimuli controlling teachers' behaviors. In the ideal situation, school administrators and society would provide rewards for the teacher contingent upon students' progress. Thus, students' progress could be considered as token

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reinforcers backed up by such reinforcers as promotion, salary increments, and recognition of the teacher by the community.

The role of the consulting teacher in the model. When a student is not making satisfactory progress toward objectives even though the student's teacher is employing his full repertoire in trying to achieve such progress, the teacher could turn to a consulting teacher for help in arranging for more effective teaching/learning procedures. This help would come in the form of instruction regarding the principles of the behavior model of education and applications of these principles. Thus, the consulting teacher, under this model, is an expert in applied behavior analysis and in helping teachers learn to apply the principles of behavior analysis.

Handicapped learners. The behavioral model of education presented above does not specify which children are considered handicapped learners. Instructional objectives could apply equally to all children, regardless of where they fell on entry level skills and regardless of their rate of progress toward the objectives under the existing teaching/learning procedures. Standard definitions of handicapped learners involve the computation of averages. The handicapped learner is said to be the child who deviates from the average in one or more ways. For example, employing a traditional special education label, a retarded child is less than average in his rate of acquiring behaviors which lead toward instructional objectives.

Under this model, one would be most apt to talk of <u>average environments</u> rather than <u>average children</u> (Lindsley, 1965). A given child might not be progressing at a satisfactory rate in the average teaching/learning environment that a given classroom offers. This formulation leads to change of the teaching/learning environment: changes in children's behaviors depend upon changes in the teaching/learning environment. However, as a major goal of special education in Vermont was to train regular teachers through services to referred children with the greatest need for special help, a decision rule for consulting teacher acceptance of teacher referrals was required. The rule currently employed by consulting teacher is outlined as follows:

1. teacher identification of a student whose behaviors are not evidencing satisfactory progress toward instructional objectives;
2. measurements of referred behaviors indicating need for improvement (i.e., behavioral changes);
3. identified student behaviors being relevant to educational growth. For example, a consulting teacher would help a teacher arrange for the referred child to more frequently sit in his assigned seat only if the teacher also agreed to work with the consulting teacher to increase the student's spelling accuracy.

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The above attempt to define handicapped children as related to consulting teacher services leaves several questions unanswered. What levels of baseline measures are low enough to justify the services of a consulting teacher? When a child has been referred because of deficits in a particular academic behavior, should the consulting teacher insist on obtaining baseline measures for other behaviors, both academic and social? Attempts to resolve such questions are currently in progress.

Training Consulting Teachers

The first program to train consulting teachers has been described by McKenzie, Egner, Knight, Perelman, Schneider, and Garvin, (1970). This program was revised and strengthened during the 1969-70 school year. Fox (1970) carried out an analysis of the tasks performed by consulting teachers. Over 300 tasks were delineated and ordered into four general categories: individualizing instruction, analysis of behavior, research, and consulting/training.

Modules. The four task categories were translated into modules of instruction for the training of consulting teachers. Although not yet meeting the criteria for instructional objectives (Mager, 1962), the modules do serve as ultimate reference points in the training of consulting teachers and are described below:

1. Individualizing Instruction: the student will help teachers develop individualized sequences of

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instruction in the major areas of the elementary curriculum, with priority given to language and arithmetic behaviors. Sequences must include measurement of entry level skills, derivation and specification of instructional objectives, selection of relevant learning materials, and measurement of pupil progress. Sequences of instruction must be implemented with selected pupils and must include reliable data indicating successful completion of the sequences. A written evaluation of one instructional sequence must be presented to and approved by faculty.

2. Analysis of Behavior: the student will demonstrate his knowledge of the terminology and principles of the analysis of behavior by helping teachers and parents modify the behaviors of handicapped learners in the classroom setting as demonstrated by reliable measures of learners' behaviors. These applications of analysis of behavior will focus on:
    a. reinforcement
    b. scheduling
    c. shaping
    d. errorless discrimination.

3. Research: the student will evaluate research relevant to the education of handicapped learners according to the following criteria: applied, behavioral, analytic,

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technological, conceptual, effective, and generality (Baer, Wolf, and Risley, 1968).

The student will adapt research meeting the above evaluative criteria to permit application of the research procedures to handicapped learners.

Through consultees, the student will apply adapted research to handicapped learners with regular measures of learner's behaviors which reflect the effectiveness of the adaptation.

4. Consulting/Training: the student will consult with teachers, parents, and administrators to help them serve 32 handicapped learners as demonstrated by measured behavioral changes in these learners.

The student will prepare and conduct a workshop on individualizing instruction and analysis of classroom behavior. School administrators, teachers, paraprofessionals, parents, and college undergraduates and graduate students may be participants in the workshop.

The student will prepare practica involving applications of individualizing instruction and analysis of classroom behavior acceptable to the University's Special Education Program as 12 graduate credit hours toward

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an inservice Master of Education Program to prepare master teachers with special education skills.

The student will make formal and informal presentations describing the training of consulting teachers, the role of the consulting teacher in the school, data from service projects performed by the student and consultees, and other related topics when called upon to do so. Presentations may be given for various special interest groups, school personnel, and other professionals.

The individualizing instruction and analysis of behavior modules describe skills that lead to an application of the behavioral model of education. Achievement of the research module enables the student to gain and apply new knowledge of individualizing instruction and the analysis of behavior. The adaptation of research which has met the Baer, Wolf, and Risley (1968) criteria is aimed at having the classroom teacher with whom the consulting teacher is working apply researched procedures. For example, in the elegant Hall, Lund, and Jackson study (1968), teacher attention was demonstrated to have reliable effects on the study behaviors of elementary school children. In order for a teacher to carry out procedures of this research, research measures employed would have to be adapted for teacher use. In the study, observers took the measures which were based on 10 second intervals. Such measurements

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would be difficult for a teacher to undertake. Adaptations of these measurement procedures has been made to allow teachers to sample at periodic intervals - for example every three minutes - the study behaviors of their students and obtain reliable measures of study behavior (McKenzie, 1970).

To achieve the modular objectives, over 200 specific instructional units have been developed. Figure 1 is an outline of one of the units in the individualizing instruction module.

UNIVERSITY OF VERMONT SPECIAL EDUCATION PROGRAM

INDIVIDUALIZING INSTRUCTION MODULE

CLASSROOM OBSERVATION UNIT

UNIT OBJECTIVES:

THE STUDENT WILL PERFORM RELIABLE (90% AND ABOVE AGREEMENT OR COFUNCTIONAL CORRESPONDENCE WITH AN INDEPENDENT OBSERVER) CLASSROOM OBSERVATIONS USING THE FOLLOWING THREE METHODS:

A. FREQUENCY RECORDING
B. CONTINUOUS RECORDING
C. SAMPLE RECORDING

SUGGESTED READINGS:

SUGGESTED ACTIVITIES:

SUGGESTED PRACTICUM EXPERIENCES:

Figure 1. A sample instructional unit used to train consulting teachers.

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As can be seen in Figure 1, each unit specifies an instructional objective as well as suggested activities, readings, and practica experiences which will help achieve the objective. These are suggested as the student may be able to produce evidence that he has already met the objective.

Entry level tests for the modules are not given to students. However, students who have many or all of the skills of the modules very rapidly complete units. For example, in the unit in Figure 1, if a given student had already undertaken classroom observations using the methods of frequency recording, continuous recording, and sample recording with satisfactory measures of reliability, the student would only produce these measures and reliability indices to complete the unit.

The units for each module are sequenced in what is an apparently appropriate order for the student to complete them. The students's progress through the units is self-paced, and each unit must be mastered before going on to the next (Michaels, 1971).

Experienced elementary and special class teachers begin study in the summer and continue on for two additional academic years. The complete training program is composed of 60 graduate credit hours with 15 of these hours in formal course work, 21 hours in practica involving applications of principles studied, and 24 hours of supervised internship in a Vermont school district.

Individualizing instruction, analysis of behavior, and research modules all form enabling objectives for the achieve-

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ment of the consulting/training module. During the course of their training to be consulting teachers, students serve 32 handicapped learners, two during the initial summer, 10 during the first academic year, and 20 during the internship year. During the internship year, students conduct a workshop for teachers who have referred children to the interns. A series of practica courses is developed which the intern will begin to teach the year following his internship to teachers in his district who have entered a part-time Master of Education Program preparing master teachers with special education skills. The intern also has a half-time aide provided by his internship district, and during the internship year the aide is trained by intern to conduct classroom observations, graph measures of students' progress, and develop individualized instruction materials.

Consulting procedure. To help teachers and parents of referred children learn and apply the principles of individualizing instruction and analysis of behavior, students are taught to follow specified steps which form a procedure for consulting. These steps have been effective in teaching consulting skills and are outlined below:

Step 1: Referral Procedure. When a teacher has identified a child in his class who is not progressing satisfactorily, the teacher contacts his principal and receives a referral packet. In this packet, the

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teacher specifies behavioral deficits of the child and returns the packet to the principal, who contacts a consulting teacher. The consulting teacher arranges the first meeting with the teacher (typically by telephone) and outlines in general the steps which teacher and consulting teacher will follow.

Step 2: First Meeting of Teacher and Consulting Teacher. The consulting teacher helps the teacher define the problem in specific terms so that relevant behaviors are observable by at least two. An instructional objective is defined. The specified time period during which the behavior will be measured is chosen. A measurement procedure is defined as well as when the first data will be taken. The consulting teacher prepares a graph demonstrating how data points will be plotted. An inventory which identifies potential reinforcers for the child is completed. Consulting teacher and teacher agree to meet again when, and only when, the teacher has obtained and graphed measures of the child's behaviors.

Step 3: Second Consulting Teacher and Teacher Meeting. The teacher must bring plotted data to this meeting.

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The definition of instructional objective and measurement procedures are reviewed. Arrangements for establishing the baseline are discussed: the baseline will include stabilized measures of behavior, a preliminary description of the current teaching procedures and materials, as well as reliability measures obtained by the consulting teacher or his aide. A description of the child and a seating chart demonstrating his placement in the classroom is written, and arrangements for the first meeting with the parents of the child are made.

Step 4: First Parent Meeting. Teacher, consulting teacher, and parents go over the graphed data. A joint decision as to what will constitute a baseline is reached. Also discussed are potentially reinforcing objects and activities in the home. Parents sign letters indicating their consent for the use of special procedures to help their child.

Step 5: First Classroom Visit by Consulting Teacher. The consulting teacher observes the child in the classroom and notes the teaching/learning procedures and materials in effect. He attempts to identify modification procedures which will lead to more satisfactory educational growth of the child.

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Step 6: Selection of Modification Procedures. One or more meetings are held with the teacher to specify the changes in teaching/learning procedures that will be implemented to improve behaviors of the child.

Step 7: Second Parent Meeting. Present at this meeting are the consulting teacher, principal, parents and occasionally the child. The procedures which appear to be good candidates for beneficially modifying the child's behaviors are discussed. The consulting teacher clarifies these procedures and insures that all at the meeting understand and agree to the procedures. If the child is present at this meeting, the consulting teacher pays particular attention that the child agrees to the procedures.

Step 8: Implementation of Modification Procedures. The selected procedures are implemented with the teacher continuing to take measures of the child's behaviors, with reliability checks of measures made by the consulting teacher's aide.

Step 9: Evaluation of Procedures. Teacher and consulting teacher begin evaluation of modification procedures immediately upon implementation. If the procedures are reliably changing the referred child's behaviors

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in a satisfactory way, then consulting teacher and teacher go on to Step 10. If procedures are not satisfactorily effective, they return to Step 6.

Step 10 Maintenance and Follow Through. Once the child's behaviors have reached the levels of the instructional objective, measurements are taken only occasionally, rather than daily. If reinforcement has been used in the modification, the schedule of the reinforcer is gradually thinned: it is made contingent upon the response only occasionally. At this point an exit interview is held for the parents and teachers where data showing the changes in the child's behaviors are reviewed.

Evaluation of Training of Consulting Teachers

Services to children. The major evaluative index of the training of consulting teachers is the services they perform for children. During the internship year, students perform services with reduced consultation from faculty, and each intern has as his objective providing services to 20 children as demonstrated by measured changes in children's behaviors. Two case studies, P_1 and P_{60}, are presented below as representative examples of the services the two interns currently in the program have provided for 40 children.

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P_1 (Christie, 1971). P_1 was referred to the consulting teacher intern because of his disruptive behaviors and his inconsistency in completing assigned work. Proceeding through the consulting steps, the focus behavior for P_1 was defined as percentage of written work completed each school day in reading, arithmetic, social studies, language arts, and science. Each day the teacher was to total the number of written responses P_1 had completed, divide these by the total responses assigned, and multiply by 100. In this way, a percentage of work completed each day could be derived and graphed.

Reliability was determined by the intern's aide rechecking P_1's papers and recalculating percentages completed. On several occasions the intern also checked P_1's work. Percentages of work completed, calculated by aide, intern, and teacher were identical.

On the intern's first visit to the class during baseline conditions, she observed the following behaviors during a half-hour period:

1. P_1 sat in the sink, swearing, squirting water at classmates, and pounding his feet on the cabinets.
2. He crawled inside the cabinets, making loud noises, throwing contents on the floor.
3. He went to his desk, as instructed by the teacher, knocked his chair over, pulled the contents of the desk out, and knocked the desk over.
4. He made airplanes out of workpapers and sailed them around the room.

5. He walked by a group of desks, yelled at the children, threw their papers on the floor, and tipped one desk over.

During that half-hour, P_1 was engaged in appropriate behavior 6/10 of a minute or 36 seconds.

Baseline measures (Figure 2) indicated for a 15 day period that P_1 completed on the average 40% of his assigned written responses, with wide day-by-day variability. The second conference was held with P_1's mother. (P_1's mother and father were divorced with P_1 living with his mother.) It was decided that P_1 would earn the new bicycle which the mother had planned to purchase. Each day he might earn 10 points for completing reading, five points for math, and 10 points for "good" behavior. No points were earned for completing written responses in social studies, language arts, and science because written assignments were not made every day in these subjects and P_1 had completed these assignments with better consistency than math and reading. A card signed by the teacher was sent home indicating how many points P_1 had earned for the day. The mother was given a large bar graph with sections marked with pictures of bicycle parts. P_1 could first earn one pedal of the bicycle which cost 50 points. The total price of the bicycle was set at 1,000 points, with different point costs for different parts of the bicycle.

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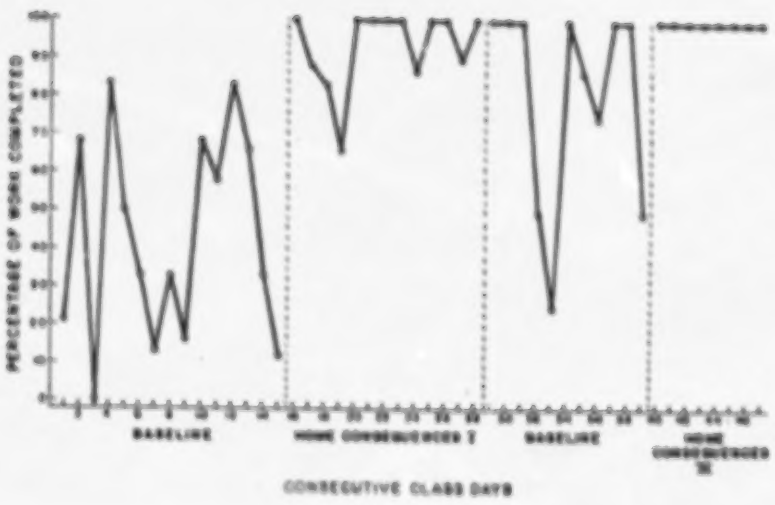

Figure 2. P_1's percentages of daily written responses completed.

The objective was for P_1 to complete 100% of his work on each school day, and to demonstrate more appropriate social behaviors as judged by his teacher. With the points and their exchange at home for bicycle parts in effect, P_1's percentages complete markedly increased (Home Consequences, Figure 2). During this

time, as judged by the teacher, P_1's good behavior also increased. Every 30 minutes the teacher would go to P_1 and discuss his behavior during the preceding 30 minute period and award him a point if behaviors met her requirements. P_1 earned eight to 10 points per day for his good behavior.

Beginning with day 29 (Figure 2), P_1's mother left home for a trip. Although his percentages complete maintained for several days, they soon became variable. During this time he continued to earn points for his work completed and good behavior and had his card signed by the teacher to take home, but as he was staying with a relative, and his bar graph was at his mother's home, no longer was he exchanging earned points for bicycle parts. On day 40 (Figure 2), his mother returned from the trip. Subsequently, P_1's behavior reached the 100% level where it has remained. With the return of his mother, P_1 earned nine to 10 of the 10 points for good behavior each day.

P_{60} (Flood, 1971). P_{60} was among 12 pupils in a transitional first grade classroom. Each of the 12 pupils had had previous kindergarten experience, but were judged to lack appropriate academic and social skills required in a regular first grade classroom.

The teacher had worked with the intern since the beginning of the year. During the first half of the school year, the teacher had modified social behaviors. During the second half of the school year the teacher chose to modify language behaviors.

The majority of her pupils did not complete their assignments, made careless errors, and were very easily distracted from their work. The teacher, with the help of the intern, decided to establish a token reinforcement program for the language behaviors of her entire class. Measurements were kept for all 12 children. However, only the data of P_{60} are here presented.

Three language behaviors were defined. The first involved the daily writing lesson in which 10 letters and five words were printed. The words included the name of the day, the month, the child's first and last name, and address. Each of the letters and words written "correctly" would count as one point. To be considered correctly written, letters had to rest on the lines of primary writing paper: the top and bottom of the letter had to touch darker lines and the appropriate middle portion of the letter had to rest on the lighter line, and the lines forming each letter could not meet the lines of any other letter (see Figures 4 and 5). Each child was also given four teacher prepared workpapers daily. Workpapers involved reading readiness skills, such as color and word matching. The third behavior measured was the percentage correct on two reading workbook pages which were taken from the Palo Alto Reading Program. Each child worked on his own level for both workpapers and workbook pages.

Reliability checks were made periodically by the intern and her aide. They scored papers independently of the teacher and the two sets of scores were compared. Independent scores

of workpapers and workbook assignments were identical. However, agreement of scores of writing assignments were less than desirable for the first few baseline measures, though agreements soon increased to 100% for the remainder of baseline and continued at 100% for the entire contingency period.

During baseline the teacher corrected each paper and recorded the number of correct letters and words, and percentages correct of the four workpapers, and two reading workbook pages.

During contingency, when the child finished his writing lesson he would raise his hand and the teacher would correct it by circling those letters or words which met her criteria. One point was given for each letter and one for each word printed correctly. Points were immediately recorded on an index card marked in 100 squares.

The pupil then went on to complete his workpapers, at which point the teacher corrected these papers. A workpaper which was 100% correct on the first attempt earned 10 points. A corrected workpaper earned five points. One point was also given for each time the child wrote his name on a workpaper.

The child would then go on to complete his two workbook pages. Here, a completely correct page on the first effort was worth 20 points, while a corrected page was worth 10 points. Again, one point was given for a child writing his name on each page.

Pupils worked on their language assignments from 8:30 to 10:00 every morning. From 10:00 to 10:30 points were spent for

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desired activities, such as use of a workbench, painting materials, books and toys, and erector set. From 10:30 to 11:00 children attended a gym period. From 11:00 to 11:30 the children bid for class helper jobs for the following day. The pupil with the greatest number of unexpended points was able to trade his remaining points for a job first. The one with the next most points traded second, and so on until each child had a job and no remaining points. In this way, all points earned for a given school day were expended and a new point card was begun each school day. As points were spent, the teacher crossed them off the card.

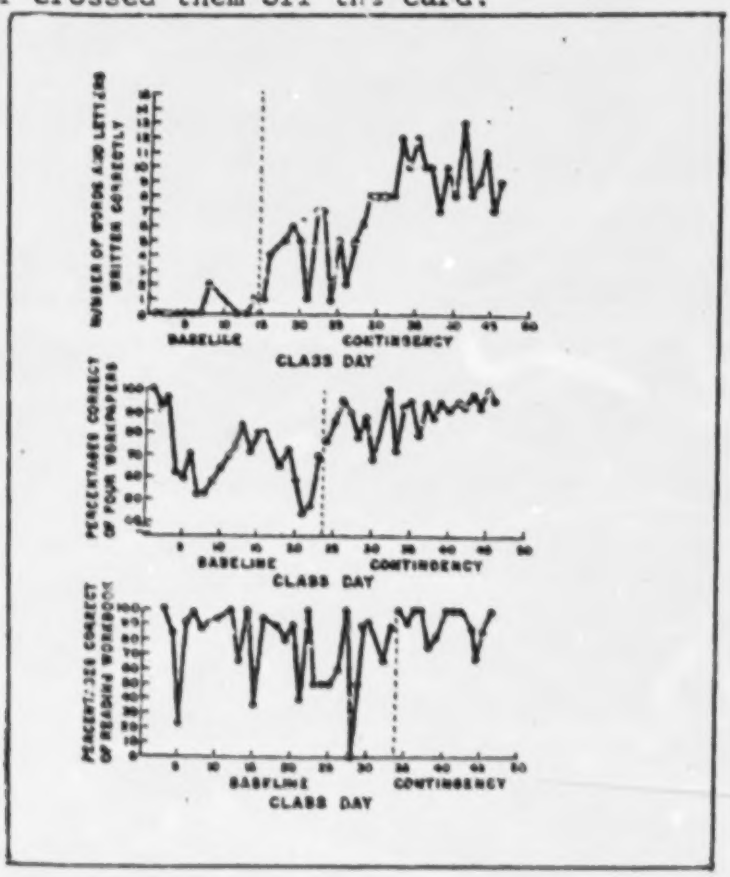

Figure 3. P_{60}'s writing, and workpaper and work book percentages correct.

After 14 days of baseline for writing, P_{60} began to earn points for his writing behavior (Figure 3). The number of words and letters written correctly for his writing assignment increased markedly. As P_{60} could earn a maximum of 15 points at this time, the activities for which points were exchanged were priced low. Because reliability of writing behavior is difficult to determine, P_{60}'s writing papers were retained for both baseline and contingency conditions so that additional observers could judge whether his writing behavior had improved. Figure 4 is a photograph of P_{60}'s writing behavior during baseline on day three, and Figure 5 is a picture of his writing behavior during contingency on day 33.

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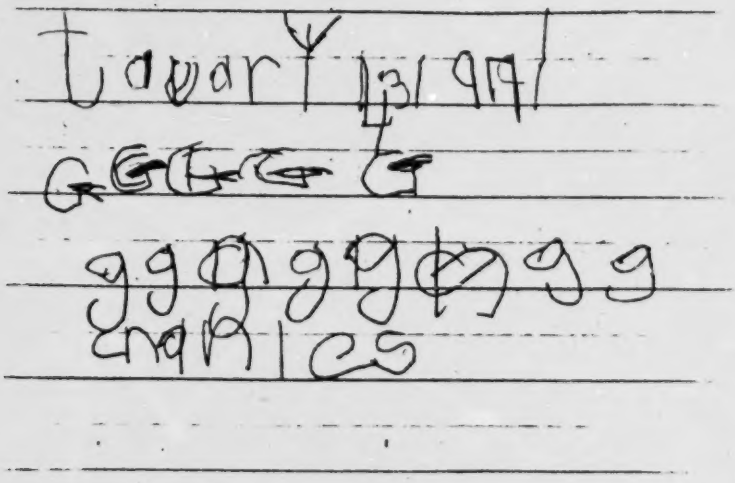

Figure 4. Sample of P_{60}'s writing on day three of baseline conditions.

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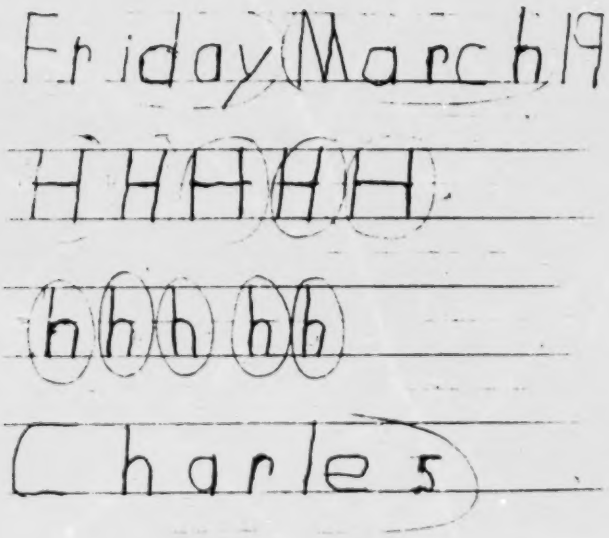

Figure 5. Sample of P_{60}'s writing behavior on day 33 of contingency conditions.

On day 24, P_{60} began earning points for teacher made workpapers with an associated increase in his percentages correct for these workpapers (Figure 3). On day 34 (Figure 3) P_{60} could earn points for correct responses on his assignments in reading workbook leading to an increase in percentages correct on the workbook pages.

As additional points could be earned for correct responses on workpapers and workbook assignments, prices of purchased activities were increased.

Additional evaluations. As students training to be consulting teachers complete instructional units, units are evaluated and returned with suggestions for further work and rewriting, if such is necessary. Frequently units are presented by the student both in written and oral forms and both occasions lead to feedback and suggestions for additional work if needed. In addition, each student has a study committee composed of faculty who conduct periodic reviews of units and case studies completed by students. Feedback and indiviual instruction is given to the student based on these reviews. Evaluation of units and reviews of student work serve as evaluations of the training program and have led to modifications of the program.

An interesting additional evaluation is provided by the number of teachers, who after working with consulting teachers-in-training on referred children, have gone on to apply the techniques they have learned, including measurement techniques,

to non-referred children. For example, during the 1969-1970 school year over 200 children were referred by teachers to consulting teachers-in-training. An additional 200 non-referred children were served through applications of procedures learned with referred children.

It is the goal of the Special Education Program at the University of Vermont to train approximately 200 consulting teachers for Vermont. In this way, it is planned that a comprehensive community mental health program, as described by Patterson (1969), can be put into effect for all schools in Vermont. To date, 24 of Vermont's 52 superintendencies have been contacted in regard to their receiving interns who, following the internship year, would be employed as full-time consulting teachers. All 24 superintendencies have indicated their wish to employ consulting teachers, demonstrating additional positive evaluation of the training program.

Summary. Evaluations indicate that the training of consulting teachers is successful and that these personnel can effectively contribute to the academic and social development of handicapped children, while at the same time training regular classroom teachers in special education skills. Moreover, results indicate that certain handicapped children can be effectively managed and educated within regular classrooms. The consulting teacher approach thus appears to be a viable

supplement to other delivery systems for providing special educational services. It should be both interesting and exciting to watch the expansion of consulting teacher services to include the entire state of Vermont.

References

Baer, D., Wolf, M., and Risley, T. Some current dimensions of applied behavior analysis. Journal of Applied Behavior Analysis, 1968, 1, 91-97.

Bateman, B.D. Visually handicapped children. In Haring, N.G. & Scheifelbusch, R.L. (Editors), Methods in Special Education. New York: McGraw-Hill, 1967, 257-302.

Christie, L. Home consequation of academic behaviors in a disruptive second grade boy. Internship Report, Special Education Program, University of Vermont, 1971.

Darrah, J. Forum: diagnostic practices and special classes for the educable mentally retarded - a layman's critical view. Exceptional Children, 1967, 33, 523-528.

Dunn, L.M. Special education for the mildly retarded - is much of it justifiable? Exceptional Children, 1968, 35, 5-22.

Flood, C. Improving language behaviors in a transitional first grade classroom. Internship Report, Special Education Program, College of Education, The University of Vermont, 1971.

Fox, W.L. The Master of Education Program to Prepare Consulting Teachers. Unpublished manuscript, Special Education Program, College of Education, The University of Vermont, 1970.

Hall, R.V., Lund, D., and Jackson, D. Effects of teacher attention on study behavior. Journal of Applied Behavior Analysis, 1968, 1, 1-12.

Hanley, E.M. Review of research involving applied behavior analysis in the classroom. Review of Educational Research, 1970. 40, 597-625.

Lindsley, O.R. Direct measurement and prothesis of retarded behavior. Journal of Education, 1965, 147, 62-80.

Mager, R.F. Preparing Instructional Objectives. Palo Alto, California: Fearon Publishers, 1962.

McKenzie, H.S. 1968-1969 Report of the Consulting Teacher Program, Vol. I. Burlington, Vermont: Special Education Program, College of Education, The University of Vermont, 1969.

References (cont.)

McKenzie, H., Egner, A., Knight, M., Perelman, P., Schneider, B., and Garvin, J. Training consulting teachers to assist elementary teachers in the management and education of handicapped children. Exceptional Children, 1970, 37, 137-143.

McKenzie, H.S. A Report on the University of Vermont's Consulting Teacher Program: Some measures of and contingencies for some school behaviors. Paper presented at Kansas Symposium on Behavior Analysis in Education, University of Kansas, Lawrence, Kansas, April, 1970.

Michaels, J.L. Individualized mass education without TV or computers. Paper presented at the Third Banff International Conference on Behavior Modification, University of Calgary, Calgary 44, Alberta, CANADA, April, 1971.

Patterson, G.R. A community mental health program for children. In Hamerlynck, L.A., Davidson, P.O., and Acker, L.E. (Eds.), Behavior Modification and Ideal Mental Health Services. Calgary 44, Alberta, CANADA, University of Calgary, 1969, pp. 131-179.

Skinner, B.F. The Technology of Teaching. New York: Appleton-Century-Crofts, 1968.

Terrace, J.S. Discrimination learning with and without "errors". Journal of the Experimental Analysis of Behavior, 1963, 6, 1-27.

Footnotes

[1] The program described is funded in part by a Title VI-B, ESEA grant from the United States Office of Education to the Vermont State Department of Education, and grants from the Bureau for the Education of the Handicapped and the Bureau of Educational Personnel Development, United States Office of Education to the Special Education Program, University of Vermont. However, the opinions expressed herein do not necessarily reflect policy or endorsement of the United States Office of Education.

[2] The author wishes to thank faculty and students of the University of Vermont's Special Education Program and Jean Garvin, Director, Division of Special Educational and Pupil Personnel Services, Vermont State Department of Education, for their substantial contributions to the development of the consulting teacher approach to special education and, thus, to this paper.